

What is claimed is:

- 1 1. A data management method for distributing digital
- 2 content in which annex information is visibly arranged,
- 3 the data management method comprising:
- 4 a step of duplicating as a discrete data unit a part
- 5 of said digital content including a position where said
- 6 annex information is visibly arranged, and encrypting the
- 7 discrete data unit to create an encrypted discrete data
- 8 unit;
- 9 a step of embedding within said digital content as
- 10 invisible information image-compositing information,
- 11 relating to position and size for arranging said annex
- 12 information in said digital content, and authorization
- 13 information, including encryption key information by
- 14 which said discrete data unit is encrypted, to create an
- 15 authorization information-added data unit;
- 16 a step of visibly arranging said annex information
- 17 in a position corresponding to the discrete data unit for
- 18 said authorization information-added data unit, to create
- 19 an annex information-added data unit; and
- 20 a step of creating and distributing composite data
- 21 composited from said encrypted discrete data unit and
- 22 said annex information-added data unit.

1 2. The data management method set forth in claim 1,
2 wherein said annex information is embedded in said
3 digital content as a visible digital watermark.

1 3. The data management method set forth in claim 2,
2 wherein annex information equivalent to annex information
3 embedded in said digital content as a visible digital
4 watermark is embedded in said discrete data unit as an
5 invisible digital watermark and is encrypted to create an
6 encrypted discrete data unit.

1 4. The data management method set forth in ~~any of~~
2 ~~claims 1 to 3~~, wherein said image-compositing information
3 and authorization information are encrypted with a secret
4 key and embedded in said digital content as invisible
5 information.

1 5. The data management method set forth in claim 4,
2 wherein said image-compositing information and
3 authorization information are encrypted with a secret
4 key, and embedded as an invisible digital watermark in a
5 portion of said digital content including the position
6 where said annex information in said digital content is
7 visibly arranged.

1 6. The data management method set forth in ~~either~~
2 ¹ ~~claim 4 or 5~~, wherein said secret key is at least one
3 selected from among: user identification information,
4 identification information for on-board devices in users'
5 in-use computers, identification information for on-board

6 CPUs in users' in-use computers, identification
7 information specific to recording media storing said
8 digital content, and user login information registered in
9 users' in-use computers.

1 7. The data management method set forth in claim ¹ ~~4~~
2 ~~or 5~~, wherein said secret key is identification
3 information common to a plurality of users.

1 8. The data management method set forth in claim ¹ ~~4~~
2 ~~or claim 5~~, wherein said secret key is at least one
3 selected from among identification information specific
4 to distributors of said digital content, and
5 identification information specific to copyright holders
6 of said digital content.

1 9. The data management method set forth in ~~any of~~
2 claims 1 to ~~claim 8~~, further comprising:
3 a step of separating the authorization information-
4 added data unit and the encrypted discrete data unit from
5 the distributed composite data;
6 a step of extracting the image-compositing
7 information and the authorization information from the
8 separated authorization information-added data unit;
9 a step of using the extracted authorization
10 information to restore the encryption key by which said
11 encrypted discrete data unit is encrypted;

12 a step of using the restored encryption key to
13 restore said encrypted discrete data unit into the
14 discrete data unit; and

15 a step of compositing, based on said image-
16 compositing information, the restored discrete data unit
17 into image data for said authorization information-added
18 data unit.

1 10. The data management method set forth in claim 9,
2 wherein invisible information embedded in said
3 authorization information-added data unit includes use
4 count information on times users use said digital
5 content, and said invisible information is overwritten
6 every time a user uses said digital content.

1 11. The data management method set forth in claim
2 10, wherein if the use count information included in said
3 invisible information exceeds a predetermined value,
4 users' use is restricted.

1 12. The data management method set forth in ~~any of~~
2 ¹ claims ~~9 to claim 11~~, configured to restrict saving of
3 the image-compositing information and authorization
4 information extracted from said authorization
5 information-added data unit.

1 13. The data management method set forth in ~~any of~~
2 ¹ claims ~~9 to 12~~, configured to restrict saving of the
3 image data in which the restored discrete data unit is

4 composited into the image data for said authorization
5 information-added data unit.

1 14. A recording medium on which is recorded a
2 program for an image-generating method comprising:

3 a step of duplicating as a discrete data unit a part
4 of digital content including a position where annex
5 information is visibly arranged, and encrypting the
6 discrete data unit to create an encrypted discrete data
7 unit;

8 a step of embedding within said digital content as
9 invisible information image-compositing information,
10 relating to position and size for arranging said annex
11 information in said digital content, and authorization
12 information, including encryption key information by
13 which said discrete data unit is encrypted, to create an
14 authorization information-added data unit;

15 a step of visibly arranging said annex information
16 in a position corresponding to the discrete data unit for
17 said authorization information-added data unit, to create
18 an annex information-added data unit; and

19 a step of creating composite data composited from
20 said encrypted discrete data unit and said annex
21 information-added data unit.

1 15. A transmission medium transmitting a program for
2 a method of image creation comprising:

3 a step of duplicating as a discrete data unit a part
4 of digital content including a position where annex
5 information is visibly arranged, and encrypting the
6 discrete data unit to create an encrypted discrete data
7 unit;

8 a step of embedding within said digital content as
9 invisible information image-compositing information,
10 relating to position and size for arranging said annex
11 information in said digital content, and authorization
12 information, including encryption key information by
13 which said discrete data unit is encrypted, to create an
14 authorization information-added data unit;

15 a step of visibly arranging said annex information
16 in a position corresponding to the discrete data unit for
17 said authorization information-added data unit, to create
18 an annex information-added data unit; and

19 a step of creating composite data composited from
20 said encrypted discrete data unit and said annex
21 information-added data unit.

1 16. A recording medium on which is recorded a
2 program for an image-restoration method comprising:

3 a step of separating an authorization information-
4 added data unit and an encrypted discrete data unit from
5 distributed composite data;

6 a step of extracting image-compositing information
7 and authorization information from the separated
8 authorization information-added data unit;

9 a step of using the extracted authorization
10 information to restore the encryption key by which said
11 encrypted discrete data unit is encrypted;

12 a step of using the restored encryption key to
13 restore said encrypted discrete data unit into the
14 discrete data unit; and

15 a step of compositing, based on said image-
16 compositing information, the restored discrete data unit
17 into image data for said authorization information-added
18 data unit.

1 17. A transmission medium for transmitting a program
2 for an image-restoration method comprising:

3 a step of separating an authorization information-added
4 data unit and an encrypted discrete data unit from
5 distributed composite data;

6 a step of extracting image-compositing information and
7 authorization information from the separated authorization
8 information-added data unit;

9 a step of using the extracted authorization information
10 to restore the encryption key by which said encrypted
11 discrete data unit is encrypted;

12 a step of using the restored encryption key to restore
13 said encrypted discrete data unit into the discrete data
14 unit; and

15 a step of compositing, based on said image-compositing
16 information, the restored discrete data unit into image data
17 for said authorization information-added data unit.